

TRIAC(Surface Mount Device / Non-isolated)

TMG5C80D

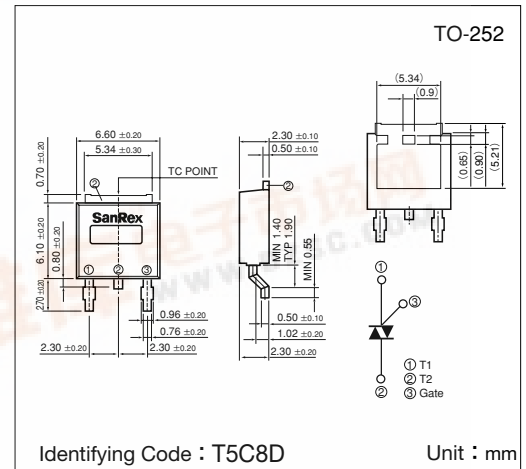
SanRex Triac **TMG5C80D** is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

Typical Applications

- Home Appliances : Washing Machines, Vacuum Cleaners, Rice Cookers, Micro Wave Ovens, Hair Dryers, other control applications
- Industrial Use : SMPS, Copier Machines, Motor Controls, Dimmer, SSR, Heater Controls, Vending Machines, other control applications

Features

- $I_{T(RMS)}=5A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

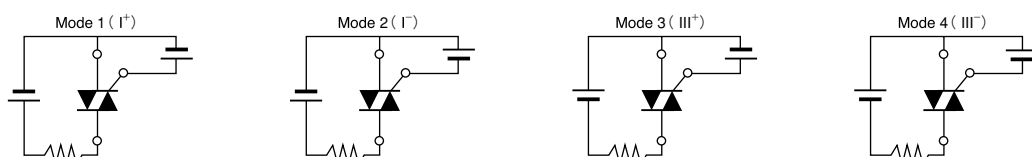
($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Item	Reference	Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage		800	V
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=107^\circ\text{C}$	5	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, Peak value non-repetitive	50/55	A
I^2t	I^2t (for fusing)		12.6	A^2S
P_{GM}	Peak Gate Power Dissipation		3	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.3	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
T_j	Operating Junction Temperature		$-40\sim+125$	$^\circ\text{C}$
T_{stg}	Storage Temperature		$-40\sim+150$	$^\circ\text{C}$
	Mass		0.32	g

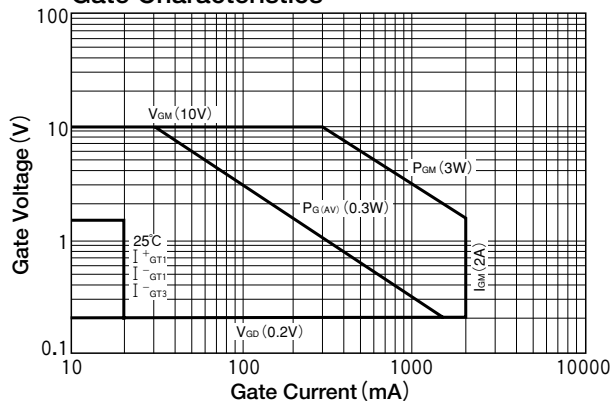
Electrical Characteristics

Symbol	Item	Reference	Ratings			Unit	
			Min.	Typ.	Max.		
IDRM	Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_J=125^{\circ}\text{C}$			1	mA	
VTM	Peak On-State Voltage	$I_T=7\text{A}$, Inst. measurement			1.4	V	
I_{GT1}^{+}	1	$V_D=6\text{V}$, $R_L=10\Omega$			20	mA	
I_{GT1}^{-}	2				20		
I_{GT3}^{+}	3				—		
I_{GT3}^{-}	4				20		
V_{GT1}^{+}	1		Gate Trigger Voltage			1.5	V
V_{GT1}^{-}	2					1.5	
V_{GT3}^{+}	3					—	
V_{GT3}^{-}	4					1.5	
VGD	Non-Trigger Gate Voltage	$T_J=125^{\circ}\text{C}$, $V_D=\frac{1}{2}V_{DRM}$	0.2			V	
$[\text{dv}/\text{dt}]_c$	Critical Rate of Rise of Off-State Voltage at Commutation	$T_J=125^{\circ}\text{C}$, $[\text{di}/\text{dt}]_c=-2.5\text{A}/\text{ms}$, $V_D=400\text{V}$	5			$\text{V}/\mu\text{s}$	
IH	Holding Current			10		mA	
Rth(j-c)	Thermal Resistance	Junction to case			3.0	$^{\circ}\text{C}/\text{W}$	

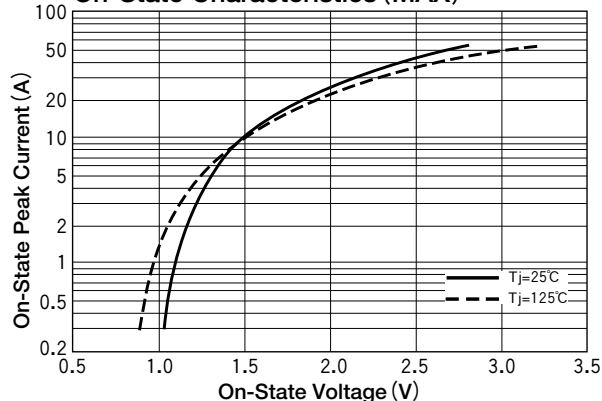
Trigger mode of the triac



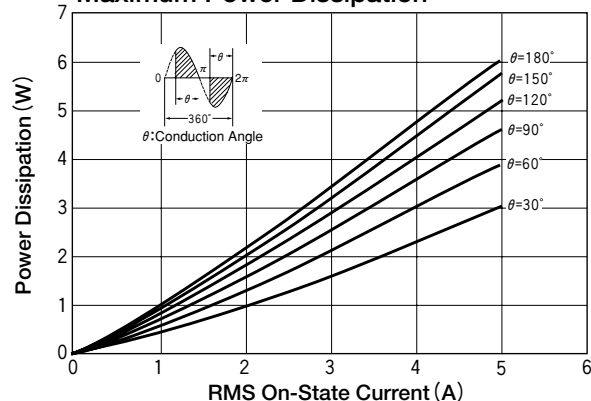
Gate Characteristics



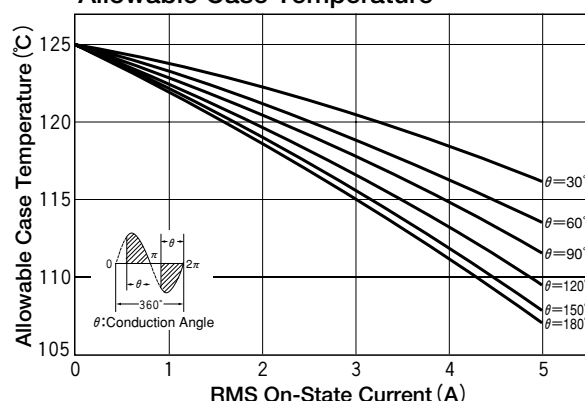
On-State Characteristics (MAX)



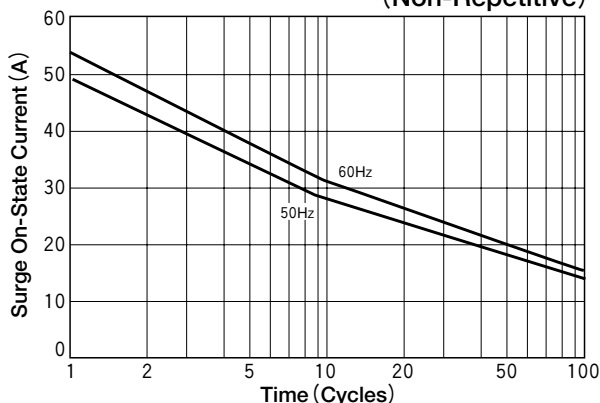
RMS On-State Current vs Maximum Power Dissipation



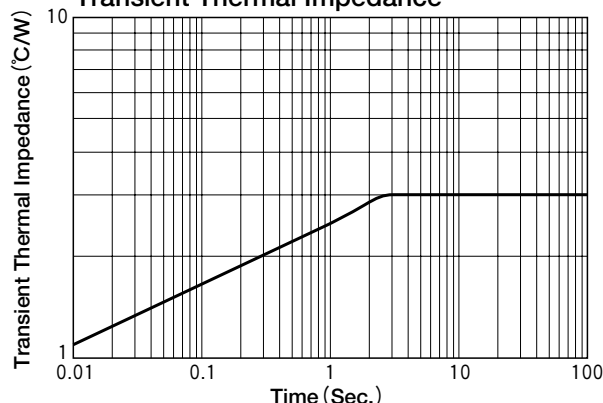
RMS On-State vs Allowable Case Temperature



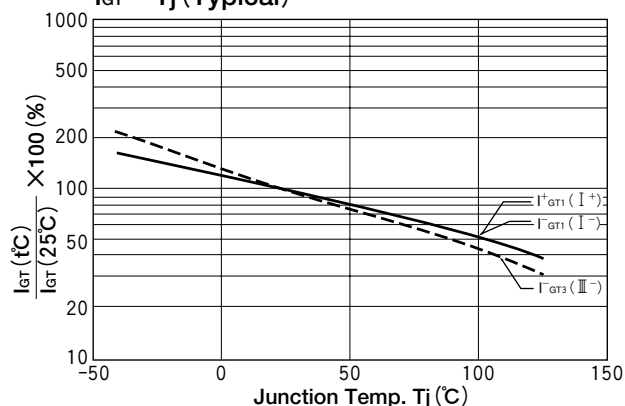
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_J$ (Typical)



$V_{GT} - T_J$ (Typical)

